

Projects in Environmental Technologies at Iowa State University

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Abstract

The Center for Sustainable Environmental Technologies at Iowa State University has a mission to develop environmental technologies that improve the environmental performance of solid fuel energy systems, including those based on coal and biomass. Current research efforts are centered on mercury abatement, instrumentation, combustion and gasification, and sulfur products. The Center has facilities for bench-scale studies to simulate mercury chemistry in flue gas and a 35 kW coal combustor to support mercury studies. Instrumentation development includes new techniques for measuring hydrogen chloride, alkali, and unburned carbon. Combustion studies include computational and experimental studies of particulate-laden gas flows in support of filtration development and an effort to develop virtual pilot plants of coal combustion systems. Studies on sulfur products involve the conversion of sulfur dioxide and other acid gases into flocculating agents for wastewater treatment.